

CASE STUDY REPORT #58  
LAKE SABRINA  
MIDDLE FORK OF BISHOP CREEK

I. Project Description

Lake Sabrina is in the eastern Sierra Nevada Mountains above Owens Valley on the Middle Fork of Bishop Creek at an elevation of 9,100 feet (see Figure 1). The drainage area to the lake covers 15 square miles and is near the western boundary of Inyo National Forest. In 1908 the California Nevada Power Company built a 20-foot high dam at the outlet of a small natural lake. This enlarged lake stores 7350 acre-feet covering 186 acres.

The dam is now operated by the Southern California Edison Company for water conservation and downstream power production. Water released from Lake Sabrina flows in the stream channel approximately 6 miles before it is diverted at power intake number 2.

II. Pre-Project Condition

Lake Sabrina was a natural lake that had peak outflow during the snow melt runoff of spring and early summer. During the autumn and winter instream flow was reduced, but to what level is unknown because data were not discovered.

The majority of the small natural streams in the vicinity of Bishop support populations of rainbow trout so it might be assumed that there were rainbow trout present in the lake and stream prior to 1908.



### III. Project Development

There is no agreement for an instream flow reservation present in either the State Water Rights License or Federal Power Commission (FPC) license issued for the Lake Sabrina Project. However, the project will be relicensed by the FPC in 1983. As a result of reentry into this project, the DFG and the U. S. Forest Service are starting stream surveys on the Middle Fork of Bishop Creek between Lake Sabrina and Intake Two to determine minimum instream flow needs (Richardson, pers. comm.).

### IV. Post Project

The regulated streamflow in the Middle Fork Bishop Creek varies greatly in mean monthly flows as exhibited in the hydrograph (Figure 2). During the dry season the stream appears to maintain flows generally greater than 10 cfs.

The DFG presently manages the section of stream between Lake Sabrina and Intake Two as a catchable trout stream. An average of 30,000 rainbow trout are stocked annually at weekly intervals from May until September.

### V. Conclusions

Although no pre-project data were available, it seems probable that the operation of Lake Sabrina releasing stored water into Bishop Creek for downstream power production has stabilized the year around instream flow regime of the creek as far downstream as the Intake Two Diversion. None of the instream flow is allocated to fish and wildlife preservation, but the stream supports

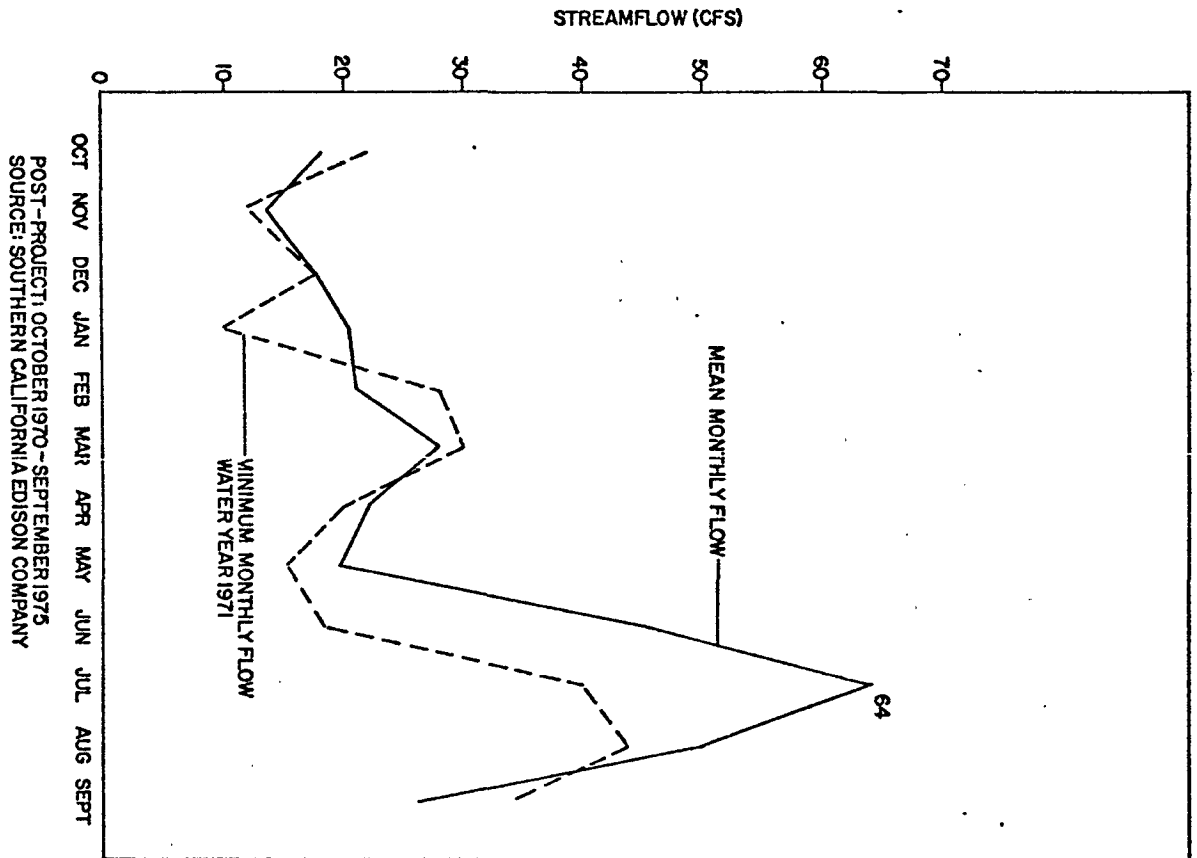


FIGURE 2  
STREAMFLOW CONDITIONS, MIDDLE FORK BISHOP  
CREEK, SABRINA LAKE

catchable trout fishery that receives a great deal of angling pressure.

The Federal Power Commission will be relicensing the Bishop Creek Intake Two Power Project in 1983. As input to the Federal Power Commission process the DFG and the U.S. Forest Service are presently conducting stream transect studies on Bishop Creek below Lake Sabrina to determine instream flow needs (Richardson, pers. comm.).

#### BIBLIOGRAPHY

##### Personal Communications

Richardson, William. 1976. Fisheries Management Supervisor, California Department of Fish and Game, Region 5, Long Beach.

Talbert, Doyle T. 1976. Bishop Hydro Division, Southern California Edison Company.